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AUSTRALIAN EXPERIMENTS IN INDUSTRY.

The Australian colonies reached their political majority, or attained self-government about 1850, at a time most favorable for experiment. This can be readily understood after a brief glance at their early history.

Australia was the first country settled by the English after the Revolutionary War. It, together with Canada, the French legacy of 1763, and the struggling settlement at Cape Colony, formed the nucleus of England's second colonial empire, which to-day is known to us as Greater Britain, and far exceeds in scope her earlier one of the eighteenth century.

The seven Australias, or the Australasian colonies, as they are now more properly called, include the two islands of New Zealand, the island of Tasmania, and the continent of Australia, which has been divided into the five immense territories of Queensland, New South Wales, West Australia, Victoria and South Australia.

All but the last two, and New Zealand, were at the outset penal settlements, colonized mainly by convicts transported from England between the years of 1787 and 1841. It was the firm expectation of England that large numbers of free settlers would speedily emigrate to Australia, when once that country was thrown open for occupation, especially as England was considered terribly overcrowded at the time. But events did not substantiate the prediction of the English ministry. Voluntary emigrants did not go, and could not be induced to go to Australia. In 1790 there were but five free settlers found in Botany Bay; in 1820, after thirty-three years of occupation, there were only thirteen hundred men of non-convict origin to twenty-four thousand population, or eighteen convicts to one free man.

This large criminal element necessitated from the start a strong, almost despotic government on the part of the Home

Office. The governor-general of Australia and his staff were generally chosen from the army and navy, and were men long used to military authority. The convicts had to be governed with an unflinching hand to prevent mutiny, which was imminent upon slightest provocation. During servitude convicts were regarded as public property, to be utilized for the good of the community, and were detailed to work under careful surveillance wherever the governor might direct. In common practice, the transports were assigned to road and bridge-making or forest-clearing—such public works as were deemed most serviceable in opening up a new country.

As long as the mass of the population was of convict composition this arbitrary control on the part of the crown was in the main justifiable, though the free settlers writhed under it. England did not confine its bureaucratic method of government to the penal settlements alone. South Australia and New Zealand, which were colonized entirely by free emigrants, were subjected to the same rigid rule. This extreme policy of "maternalism," which England ruthlessly exercised over its infant colonies during the second quarter of the present century, is a most interesting anomaly. It shows, in the first place, that England had learned little or nothing, practically, from its recent unhappy experience in America, but was still bent on enforcing the same policy which George III. had upheld so vigorously, with such havoc to his possessions. It was interesting, too, from a theoretical point of view, because England at that time was advocating the strictest adherence to the "let alone" policy of government—the minimum of state intervention at home—while practicing the maximum of government interference in the Australias.

As long as convict transportation however continued unabated to the colonies, making free settlers loath to emigrate thither from England, no thought of a liberal government in Australia was possible. It was not until the colonists

had risen with might, and by an heroic struggle of twenty years had compelled England to put an end to convict shipment, that they were in a position to demand a better government. That very movement had served to weld them into a strong nation and to prepare them unconsciously for self-rule. One after another, in swift succession, between the years of 1855 and 1860, the Australias wrested from the mother country the grant of responsible government, subject only to the control of England in commerce and foreign affairs.

The colonies were now of age, and free to act for themselves. Would they revolt from the excessive government manipulation, they had suffered from or not? Would they take a stand for *laissez-faire* or state-activity?

Laissez-faire had just achieved its most signal victory in England through the introduction of free trade. The political boon of home rule in Canada and Australia had been won through the carrying out of that same policy. One might naturally expect the Australias to adopt the same in their respective cabinet governments. But they did not. A marked change shortly became noticeable. The separate colonial governments began to take to themselves many new and extensive functions never previously exercised by the state. There seems to have been in this, no conscious imitation of any other nation;—it is questionable whether there was any other country which they could have patterned after at that time—any state that had taken to itself such powers as they now assumed.

The first problem to call forth this activity was the problem of *roads*. Roads in Australia have always been of much greater significance than is the case in most new countries. Take Europe, Asia or Africa for instance and there is found in each a well developed river-system for inland communication. America is particularly fortunate in this respect. The chain of great lakes, together with numerous river systems ramifying in every direction, have been

prime factors in directing and aiding the advance of settlement across our country. But in Australia such a net work of rivers and lakes is wholly lacking. There is one large river, the Murray, with its tributaries, the Darling, Lachlan and Murrumbidgee, but when these have been mentioned, there is little more to be added. There are a few, short, swift rivers running down from the mountains into the Pacific and Indian oceans, but these are so variable in the amount of water discharged as not to be relied upon for constant traffic. Maps show also many rivers in the interior, but these lose themselves in the sand in the dry season and in general are too shallow for extensive use. In a country so poorly supplied with navigable rivers, roads were the first requisite for settlement.

In most of the colonies, the main trunk lines have been built by the state. The country roads are also surveyed and laid out by the state, but are built and repaired by local governing boards. In New South Wales, however, the heavy traffic during the period of gold discovery made better roads imperative. Accordingly, in 1857 the Department of Roads was created and by 1864 all the roads, both main and subordinate, had been placed in the hands of the state. For purposes of maintenance, the whole colony is divided into road districts, each of which is placed under the superintendence of a resident engineer, who also decides upon the appropriation required for each division of the roadway. He is directly responsible to the engineer-in-chief for public works. *

*The roads within municipal areas are controlled by city authorities, though some of these have been subsidized by the department. There are also a few road trusts which supervise the expenditure of certain grants for roads in districts of minor importance and control a few roads in the vicinity of Sydney.

1894. "Wealth and Progress of New South Wales."

| | |
|--|--------|
| Roadways in charge of resident engineers | 33,426 |
| Miles of roadways in charge of road trusts | 1,705 |
| Miles of roadways within municipalities, subsidized by the department | 940 |

Total mileage of roads under control 36,071

The use of roads as the main arteries of traffic has been superseded by the railways which for the most part have followed the direction of the trunk roads, the tendency now being to make the roads act as feeders to the railways by converging outlying traffic toward convenient stations along the line.

Railway construction was recognized as the next requisite for the development of Australia. The extraordinary expansion of the grazing industry in the first half of the century, reaching far beyond the settled portions of the colonies into the interior, made more rapid communication with the coast absolutely necessary. In New South Wales and Victoria, railway lines had been surveyed and partly built before 1850. The discovery of gold, however, in 1851 caused such a stampede of workmen for the mines, that the lines could not be completed and opened to traffic until 1854 and 1855. These first railroads had been built by private corporations and it was expected that they would be carried on solely by private enterprise. But the management of the companies did not prove satisfactory. The mining interests demanded better accommodation for their heavy output of gold. The utility of a general railroad system began to be agitated as a most efficient means for developing the interests of all industrial classes. The policy of government railroads was immediately put forward. In 1855, the same year that New South Wales and Victoria were granted responsible government, these two colonies undertook the work of railway extension.

In South Australia, the first government lines were undertaken in 1857, in New Zealand in 1863, Queensland 1864, Tasmania 1868 and West Australia in 1874. In each of these countries, with the exception of Victoria and Queensland, there exist along with the public railways some private lines, but the proportion of the latter is very insignificant, altogether amounting to but 6.6 per cent* of the total mileage open.

* Coghlan, "Seven Colonies of Australasia," 1896 p. 160

For the first ten or fifteen years, great difficulties in construction were experienced. The initial cost of building was very heavy; the population was sparse, and the credit of the Australias was so poor abroad, that foreign loans could only be secured, if at all, at a very high rate of interest. However, by 1871 these difficulties were in the main overcome. Since then the progress of railways* has been rapid and the advisability of government ownership has not been seriously questioned. The charters of the private railway corporations moreover, have generally had *provisos* inserted in them, whereby after a certain date the respective governments can, if so disposed, acquire the lines at a fixed valuation.

The electric *telegraph* was introduced into Australasia almost as early as the railway. Official returns† can be obtained in most of the colonies since 1861, while New South Wales, Victoria and South Australia had lines in operation several years earlier. There is no apparent evidence that the telegraph in Australia has ever been operated by private companies. It has always been a public industry.

Intercolonial communication by telegraph was secured early in the sixties between Queensland, New South Wales, Victoria and South Australia. The next demand was for cable communication between Australia and England. Of the several colonies, South Australia was the most daring in the outlay for this purpose. At an estimated cost of \$1,000,000 it determined to build a transcontinental telegraph to connect Adelaide with the British cable at Port Darwin on the north. This involved great danger as it was

*Annual average of miles of railway opened:

| | |
|---------------------|-----------|
| 1854—1861 | 30 miles |
| 1862—1871 | 89 miles |
| 1872—1881 | 439 miles |
| 1882—1895 | 825 miles |

† Coghlan, "Seven Colonies of Australasia," 1894, p. 112.

necessary for the overland line* to run through the wildest part of the continent, a region that had already proven fatal to numberless explorers of the Stuart company. The report of the survey by Sir Charles Todd, is almost as thrilling as Nansen's account of his Arctic experiences, and the expedition was fraught with nearly as many hardships. For a distance of five hundred miles, a track fifty feet wide had to be cut through a forest, so thorny and so dense, that the advance corps of surveyors had to creep through the tangle of underbrush. The sufferings involved in crossing the arid wastes of the interior are well pictured in the current slang of the country, as "doing a perish."

The work was put through with great expedition—the line, 1975 miles in length, was completed two years after the beginning of the survey, and the first cable communication from England was received June 20, 1872. The estimated cost, however, fell far short of the actual expenditure, which amounted to about \$2,500,000. But brisk traffic at once set in over the line sufficiently justifying the initial outlay.†

The other colonies following the example of South Australia, made rapid progress in the extension of the telegraph, especially during the period from 1871–81.

Taking Australasia as a whole and comparing it with the leading European nations, there is no country in which the development of telegraphic communication has been so rapid and in which it has been utilized by the public to so great an extent. There are only four countries in the world that possess a greater length of line, and only seven in which a larger number of messages are sent. In Australasia, two telegrams, on an average, were sent to each inhabitant during 1896. Nowhere else, except in England, does the

* "Australian Handbook for 1896," p. 331.

† Boothby, "Statistical Sketch of South Australia," pp. 75–77.

number of messages bear anything approaching the same ratio to the population.*

The *postal system* was developed at an early date. The first post-office was established by Governor Macquarie in 1810, in the house of the postmaster, who "in consideration of the trouble and expense attendant upon his duty," was allowed to charge a certain amount for every letter he delivered in the settlement of Botany Bay. In 1825, a regular act was passed, authorizing the establishment of post-offices throughout New South Wales—but the extension of the system was very slow. In 1837 the first station was opened in the colony of Victoria, and it was in connection with this that postage stamps were first issued.

The discovery of gold, however, gave a fresh impetus to the development of the postal service. The first annual report, laid before parliament, in 1855, showed there were altogether one hundred and fifty offices in the colony.

In 1894, the mileage was eight times that of 1855, and the number of letters posted, increased thirty-two times, averaging fifty-five letters annually for each individual in New South Wales, a figure which is exceeded by no other European country except England, and none of the other Australias except Victoria and Western Australia.†

*Coghlan, "Seven Colonies of Australasia," 1896, p. 189.

| <i>Country.</i> | <i>Telegraph Lines.</i> | <i>Messages.</i> | <i>Ratio.</i> |
|---------------------------|-------------------------|------------------|---------------|
| United Kingdom | 35,286 miles. | 71,589,064 | 1.8 No. |
| France | 59,693 " | 35,490,000 | 0.9 " |
| Germany | 76,777 " | 35,324,617 | 0.7 " |
| Russia | 78,367 " | 68,027,398 | 0.7 " |
| United States | 189,936 " | 66,591,858 | 1.0 " |
| Austria-Hungary | 42,469 " | 16,506,881 | 0.4 " |
| Australasia | 46,923 " | 8,453,052 | 2.0 " |

†Coghlan, "Wealth and Progress of New South Wales," 1894, p. 741, 745.

"Seven Colonies of Australasia," 1894, p. 182.

| <i>1894.</i> | <i>Average No. of Letters.</i> | <i>1894.</i> | <i>Average No. of Letters.</i> |
|---------------------------|------------------------------------|--------------------------|------------------------------------|
| New South Wales | 55 | United Kingdom | 53 |
| Victoria | 56 | Germany | 40 |
| Queensland | 40 | Switzerland | 37 |
| South Australia | 47 | Canada | 27 |
| Western " | 62 | Austria | 25 |
| Tasmania | 36 | Netherlands | 24 |
| New Zealand | 40 | France | 19 |
| Australasia | 47 | Italy | 6 |

The government telegraph systems have long since been amalgamated with the postal departments, resulting in much greater convenience and efficiency to the community. When there is no telegraph office in a locality, a telegram may be posted at any post-office, or merely dropped into a street letter-box, from which it will be mailed to the nearest telegraph station, whence it will be transmitted by wire. There is no more difficulty connected with telegraphing than we experience in sending a special-delivery letter. The telegram is placed in an envelope, on which is endorsed the words "Telegraphic message only," and the requisite number of stamps affixed. If there happens to be no station where the message is addressed it is sent to the nearest telegraph office and thence forwarded by post without additional cost.* In this way, the administrative machinery of the postal department is made to perform double service.

Within the past fifteen years, the *telephone* has been connected with the postal service. Public exchanges for telephone service are now found in all the large cities and other important centres. When it seems more convenient, the telephone, like the telegraph, has been connected with the railways instead of the post-offices, but in either case† it is wholly within the control of the government.

The telephones were originally introduced into Australia by private companies, and there are many corporations still engaged in the business, but the public telephones are gaining at the expense of the former. Sometimes the colonies encourage private corporations to engage in new enterprises and carry them through the tentative stage, with a view to taking them over finally into their own hands. This was done by Victoria in the telephone business, which was not bought up by the government until 1887.

Another appendage of the postal department is the savings

* "Australian Handbook for 1896," p. 230.

† "Victorian Year Book," 1892, Pt. 2, p. 117. Coghlan, "Seven Colonies," 1896, p. 192.

banks. The savings-banks, since their introduction in Australia, have been well patronized and prosperous.*

There are two classes of these banks, but both are more or less under government control. The general savings banks are administered by trustees or commissioners nominated by the government. These in New South Wales date from 1832 and in South Australia from 1848. In the latter, trustee institutions are the only ones that have been established.

About 1865, however, a new departure was made in the introduction of postal-banks. † These are worked in conjunction with the post-office, and consequently are directly administered by the state. The simplicity of their working is admirable. Take New Zealand as an example. Would-be depositors may start a bank account upon depositing a shilling. The department issues postal cards on which are to be pasted penny stamps to the number of twelve. When this number is filled, the card is signed with the name and address of the depositor, and mailed to the nearest post-office, where it is placed to his credit. The habits of thrift inculcated by this means are especially noteworthy. The returns of the banks show an enormous development since 1861. Then the depositors represented only 2 per cent of the population, while in 1895 the average had risen to 21 per cent. During the severe crisis of 1893, these savings banks passed through the panic unscathed, the only result being a marked increase in deposits, while those of the ordinary banks suffered heavy diminution.

Viewing the various colonies thus in detail, it would seem

* Coghlan, "Wealth and Progress of New South Wales," 1894, pp. 741-42.

† "Establishment of Savings Banks." Coghlan, "Seven Colonies," 1894 pp. 319-25

| <i>General or Trustee Banks.</i> | | <i>Postal Banks.</i> |
|----------------------------------|--------------|----------------------|
| New South Wales | 1832 | 1871 |
| Victoria | 1842 | 1865 |
| Tasmania | Date Unknown | Date Unknown |
| New Zealand | 1847 | 1867 |
| Western Australia | None | 1864 |
| Queensland | None | 1865 |
| South Australia | 1848 | None |

that the postal system in Australia had been as completely exploited as possible, having combined under one administration the telephone, telegraph and savings-bank with the mail service. But now appears a late report from Queensland stating that a signal service bureau has been annexed to each branch of the postal service, and it has already served to simplify greatly the registering of meteorological statistics.

When we take up for consideration the municipal industries, we find in them a contrast. The question of natural monopolies,—municipal gas and electric lighting and street car lines,—which with us is almost the only form of government activity arousing interest, has there attracted scarcely any attention. Outside the large cities of Sydney and Melbourne, the density of population has not been such as to demand street-car transit. So far the lines, such as there are, have been laid and operated by private companies. Interest in the subject has recently sprung up in New South Wales, however. There we find the chief railway commissioner, who has just returned from a trip to the United States, advocating the speedy introduction of our American trolley system for their city tramways—and this is shortly to be done.

South Australia and Victoria are evincing marked enthusiasm over the introduction of municipal sewage farms, and Adelaide, South Australia, is sending out glowing reports on the working of its municipal slaughter houses. Yet as a rule, municipal industries are not nearly as prominent or extensive as might naturally be expected in countries where state activity is so pronounced.

Stopping a moment to resurvey the ground already covered, it seems evident that the Australasian colonies are agreed, so far, in placing under the state the ownership and administration of the entire machinery of transfer—all means of internal communication, including roads, railways, postal service, telephones and telegraphs.

These, as the Australians regard them, are enterprises of such general utility that the economic interests of the people can be better conserved by government undertakings than by private enterprise; accordingly, the several colonies have taken upon themselves the responsibility of transportation and exchange in order that they might more effectually facilitate and equalize the advantages of transfer for different sections of the country and all industrial classes. In the constitution recently projected for the federation of the Australias, the federal government is given power to control transportation.

However, the Australias have not been satisfied with giving indirect aid to industry merely; their respective governments are reaching out yet further to assist directly in production. A succession of dry seasons between 1875 and 1880 wrought such frightful havoc among the pastoral and agricultural classes that the central authorities were obliged for months to dispatch special water-trains into the interior to relieve the water famines. This drew instant attention to the question of irrigation.

To Tasmania and New Zealand, each with an ample rainfall, besides an ocean to draw from, water supply is a matter of little moment; but throughout the continent of Australia, *irrigation* is the issue of the times. Wheat, I believe, requires as little rain as almost any agricultural staple, but wheat demands for successful cultivation a rainfall twenty inches or more varying with the conditions of evaporation. But in Australia, four-fifths of the land averages less than twenty inches a year, and nearly a half less than five inches. In fact there is no primary industry, cattle or sheep raising, mining, agricultural or dairy farming, which does not find itself dependent to a greater or less extent upon an artificial water-supply for success.

The urgency of this need has forced irrigation upon the various governments. Sir Alfred Deakin, at the head of an investigating commission, was sent out by the Victorian

government to report upon the irrigating systems of the United States. He also made a careful study of the methods of irrigation employed in Italy, India and Egypt, and published an official report thereon, advising the immediate extension of government works in Victoria. State irrigation is not confined to the latter, however; it has been taken up by all the Australias. The movement is at present so widespread and so varied that it is possible only to enumerate a few of the experiments that are being tried.

In Western Australia, the government has aided the mining interests directly, by furnishing condensers for domestic water supply and outlining a project for laying water-races through which salt water can be conveyed from the coast to work the rich gold fields of the Coolgardie district. Artesian bores are being put down in every section of Australia, where the tilt of the strata warrants it, and a very heavy flow of subterranean water has been tapped in several localities. The outlook in New South Wales is particularly promising.

Public watering places for cattle have been constructed at short intervals along the numerous cattle-routes. These stretch for thousands of miles, from the shipping ports on the eastern and southern coasts, across the barren regions of Western Queensland and New South Wales into the arid tablelands of North Australia. But by far the greatest outlay for irrigation has been made by Victoria, New South Wales and South Australia, where extensive canal and drainage systems have been supplemented by vast water-storage dams of immense capacity designed to facilitate intensive culture in the fruit and wine-raising areas.

Another function—a most unique one—has been forced upon the Australian governments, because of the utter inability of the farmers to fight the rabbits. After repeated attempts at extermination which resulted in ignominious failure, a Royal Commission on Rabbits was appointed to investigate and report. A reward of \$125,000

was offered to anyone who would devise an effective means of ridding the country of the pest—but in vain. Then the three colonies, Victoria, South Australia, and New South Wales, decided upon rabbit-proof fencing, the respective "states to advance to lessees of crown lands the cost of the fencing, to be repaid by installments spread over the life of the fence." Altogether nearly \$10,000,000 * was spent in attempts at extermination. A single instance will suffice to show the enormity of the rabbit nuisance. A prolonged drought had driven the rabbits into a fertile section of Victoria, which had previously been fenced in with netting. Unable to escape, they perished there in heaps, whereupon it took twenty-six hundred men a week's time to bury the rabbits. Since the passage of the Rabbit Nuisance Act in 1883, New South Wales alone has erected 15,000 miles of fencing, at an expense of \$5,000,000 to the colony.

As the Australian railways are owned and controlled by the government, these can be easily utilized and made available for giving direct aid to industry. The pastoralists in Queensland are frequently obliged during the dry season to drive their sheep hundreds of miles across country to new pastures. The state, in several colonies, regularly offers a rebate of 25 per cent on such transfers of stock which have been necessitated by drought. Fruit-raisers in the interior have been given special freight-rates, enabling them to compete directly with the fruit farmers on the coast-belt, and similar differential rates have been made to shippers in the various meat industries. Desert tracts are opened up for settlement by projecting new railway lines across them, as the Victorian government has recently done in her *Mallee* district. The railroads, as in Germany, are made to carry farming materials, such as posts, rails, lime and fertilizers, at much reduced rates for the benefit of the agricultural classes. In this manipulation of rates is specially

* "Australasian Sheep and Wool," pp. 32-35. U. S. Special Consular Report. "Victorian Year-Book," Pt. 2, pp. 309-10. Coghlan, "Wealth and Progress," 1894, pp. 355-57.

noticeable the preference shown to primary industries over manufacturing interests.

Perhaps the most pronounced measure, the most radical departure, in state activity, has been made for the purpose of rendering the land more accessible to the farming class. This is being done through the gradual substitution of leasehold for freehold. New Zealand started the movement, which can be traced even as far back as 1880, to the agitation begun by Robert Stout, premier of the colony, who maintained valiantly, in season and out, that it was "a crime for the state to sell its land for cash."

By his untiring agitation, he roused the people of New Zealand from a state of indifference in 1880, to one of intense enthusiasm by 1890, the results of which are to be seen in a succession of Land Acts—opening up new tracts for settlement, providing for advances to settlers and even permitting compulsory purchase of farming land by the government should the number of would-be settlers demand it.

This movement "back to the land" thus initiated by New Zealand is being followed up by New South Wales, South Australia, Queensland and Victoria, with much energy, particularly since the crisis of 1892-1893.

The system of leasehold now being introduced into New Zealand is not intended or expected to supplant freehold tenure, but it does offer substantial advantages to the would-be settler who proposes to use the land for productive purposes. He is able to obtain a small tract of arable or grazing land at a very low rental, for a period of 999 years, or a lease in perpetuity. This practically secures to the occupier as actual fixity of tenure as freehold purchase would do, while leaving him free to expend his capital in improvements upon his property, as he may desire. Compensation for improvements is also guaranteed him, should he choose to relinquish his lease at any time.

This land movement is necessarily a slow one, but it is a

most significant one, and promises to be effectual in securing the most beneficial results to the country at large. The benefit, moreover, will not stop there. Any people who can effect the decentralizing of the overcrowded cities, and induce the working class to move back to the soil, is sure to win for itself the gratitude of every other people, since there is no problem of the present day so perplexing as that of excessive city populations.

Resurveying the Australasian field, we find the industrial classes, at the present time, occupying a much more advantageous position than they held twenty years ago. Then the various colonies had been supplied by their respective governments with roads, railways and telegraphs, in fact, everything conducive to effective internal communication and transportation. But now the scope of state activity has been further extended. Beside the indirect aid to production the states are offering direct aid to production, by placing within the reach of all a permanent water supply, and, more than that, by offering to the people every inducement to engage in agriculture, by securing to each would-be farmer good land at very cheap rates.

Having gone so far toward developing the extractive industries, it would seem as though the various states would be justified in leaving the rest of the industrial field to private enterprise; but they have not done this. Since 1890, they have been pursuing the policy of offering special aid to special industries as well as general aid to all.*

The *mining* industry is being materially assisted in two or three colonies by the grant of an annual appropriation called the Prospector's Vote. This is designated in New Zealand, as the "Reward for Gold-fields-Discovery Act." When a prospector is able to show a find running a certain number of ounces of gold to the ton, he receives a generous subsidy from the state. South Australia has recently bought a large cyanide plant, to be used in working

**British Australasian*, 1890 to date.

gold ores that would otherwise be irreducible. In New South Wales there has been established a government assay department, which is nominally free to miners. The irrigation works projected by West Australia for the benefit of the gold fields district have already been noted.

Tasmania has always been the least progressive of the Australasian colonies ; indeed, in the study of state activity, it might practically be left out of account altogether. Within the last three years, however, it has become very much interested in the *timber* industry, and the government has sent several trial shiploads of paving-blocks to London and there opened up a market for Tasmanian woods. New South Wales guarantees special aid in providing free sites for timber-seasoning near the main shipping ports. New Zealand has appointed a resident timber agent for London to open up new timber markets—the result of which is already seen in the partial displacement of Russian timber there.

The climatic conditions of southern and southeastern Australia are specially adapted for viticulture, the progress of which is marked in New South Wales, Victoria and South Australia. A few years since, the latter began the manufacture of *wines*. A wine expert was at once imported from France to superintend the government manufacture.

Finding that the excessive heat necessitated cold storage of the wine, the state has responded to the need by building huge storage warehouses along the seacoast. In these the wine is inspected, stamped by the government and stored until shipment. A wine-depot has been established in London, placed in charge of a resident wine commissioner. The aim of this measure is to keep the standard of wine exported of fine quality and to extend its use. Auction sales are now being employed to good effect in getting these south Australian wines before the English public.

The *dairy* industry is being specially fostered at present. Liberal cheese and butter bonuses have been granted by

Victoria and South Australia. Queensland has offered to advance a portion of the building funds to proprietors of new dairy-works and very low freight-rates for shipping service with refrigerating chambers. The New Zealand government sends out a butter expert to give dairy instruction in every butter factory in the colony, besides maintaining one in London to negotiate sales.

The fierce contest between beet-sugar and cane, that has already written the doom of the English sugar plantation in the West Indies, promises to be a severe struggle also in Queensland and Victoria. In Queensland cane culture is being rapidly extended. The most recent scientific methods which have proved so effective in sugar-beet culture in Germany are being introduced there. Co-operation between the cane farmers and sugar manufacturers is particularly successful. Already this intensive culture of the cane is illustrating to our American planters how much greater profits might be realized from our own plantations if similar methods were introduced into our Gulf States.

Alongside of Queensland, we see New South Wales and Victoria eagerly investigating their climatic conditions with a view to fostering the beet-sugar industry. Private grown roots disclose yields of from 15 to 24 per cent. of sugar, an ample guarantee that beet cultivation will produce good results. In 1896, Victoria passed an act empowering the government to aid in the establishment of beet-sugar factories. To every company showing an area of 10,000 acres suitable to beet culture, within a ten mile radius of a factory site, the government agrees to grant loans, not exceeding twice the amount raised by its shareholders, for the purpose of erecting mills. These are to be of three hundred tons daily capacity, and fully equipped with the most approved diffusion batteries. Repayment of the loan is to be made in twenty-three years in half yearly installments.

The position that Victoria has taken in regard to the beet-sugar industry is perfectly in keeping with its policy toward all primary production. While the other colonies have granted a bonus here and there, Victoria has outdone them all by the introduction of a most extensive bonus system.

In that colony alone, parliament has authorized the expenditure of £233,000 solely to stimulate the cultivation of food products or to encourage the acquisition of raw materials from natural sources. This appropriation has been extended to the cultivation of vegetable products to be used for the manufacture of fibre, tannin, drugs, dyes, perfumes and insecticides. Bonuses have been offered to factories engaged in fruit-canning, drying and preserving; also to vegetable oil factories. The butter and cheese bonuses have already proved an unqualified success, and these lines of business are now so well established that the bonuses have been withdrawn. £43,000 was expended in establishing a system of technical education to be given by experts, to improve agricultural methods. An additional bonus was set aside for the cultivation of forest trees of an economic character. In most of these cases, enough time has not yet elapsed to predict the failure or success of the experiments.

Whichever way we glance over the industrial field, we find the Australian governments participating actively in industry, and we find the number of industries being fostered directly by them as most inclusive, comprising mining, fruit raising, wine, timber, beet-sugar and dairy products—in fact, all the industries but once removed from mother nature. Australia is not a country designed for manufacture, and this the colonies are realizing more and more each succeeding year. If they are to grow into a great commercial nation, it must be as a primary producer. Already these industries alone produce more per inhabitant than is produced from the combined industries of any other

country.* The effect of the late crisis but tends to accentuate the imperative need of more careful exploitation of natural resources and more intensive culture of the land.

Tasmania has suffered much from the surfeit of convict population forced upon it, and has not been able, so far, to project any radical policy of industrial development. Western Australia is too young in self-government and too large in extent to have gotten its economic bearings as yet. South Australia is probably more handicapped than any other colony in that so large a part of its territory has an annual rainfall of but five inches and the soil is so excessively alkaline as to render it unfit for tillage. Statistics of the past ten years show that a very large percentage of its private capital is being invested outside the colony, particularly in New South Wales, Victoria and New Zealand, where the natural resources are rich and varied.

Queensland, perhaps, has made the most marked progress of late. It is developing its agricultural and grazing lands with great discrimination and enthusiasm. Private enterprise appears to be higher in the ascendant than elsewhere. It now ranks fourth in industry and commerce, standing next to Victoria, New South Wales and New Zealand. South Australia and New Zealand were both

* Coghlan, "Seven Colonies," 1896, pp. 315-17.

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|--|--------------|
| Total value of production, 1894-95 | £103,672,000 |
| Primary industries, " | 78,365,000 |
| Other productive industries, 1894-95 | 25,307,000 |

Average per Inhabitant.

| | | | |
|------------------------------|-----|-----|-----|
| Primary industries | £19 | 1s. | 2d. |
| Other " | 6 | 3 | 2 |

| <i>Country.</i> | <i>Average Production per Inhabitant.</i> | | |
|--------------------------|---|-----|------|
| United Kingdom | £ 8 | 2s. | 10d. |
| France | 12 | 2 | 3 |
| Denmark | 16 | 13 | 4 |
| United States | 14 | 2 | 7 |
| Australasia | | | |
| Queensland | 24 | 19 | 2 |
| New Zealand | 23 | 9 | 2 |

settled at the same time, about 1840, and by free immigrants. They have held a distinctive position from the beginning as leaders in reforms and state experimenting. They have shown themselves most fertile in projects for fostering and developing industry, and these, in most cases, have proved more practicable than those of the other Australias. It is these two colonies, moreover, which have taken the initiative in electoral, financial and constitutional reforms, the benefits of which America has already in part appropriated.

None of the Australias can be accused of lack of initiative. Each colony in its own way is aiming at the most systematic development of its natural wealth. In every colony we find the principle of state activity well grounded and its efficacy unquestioned. Indeed, the latter seems to have received a fresh impetus within the last ten years, in comparison with which the early attempts at government participation in industry, covering the period from 1855-1885, seem little more than a preamble to the far reaching policy of state action which has been inaugurated and is now being effected by New Zealand and followed out in turn by the other colonies.

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